

SEA LEVEL RISE IN MARLAND Facts and Implications for USACE

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AGENDA

- **Facts and Figures - Sea Level Rise in Md and Chesapeake Bay**
- **Efforts by State of Maryland**
- **Relationship to USACE-Md Shoreline Erosion Study**
- **Policy Implications for USACE**



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Sea Level Rise in Md and the Bay

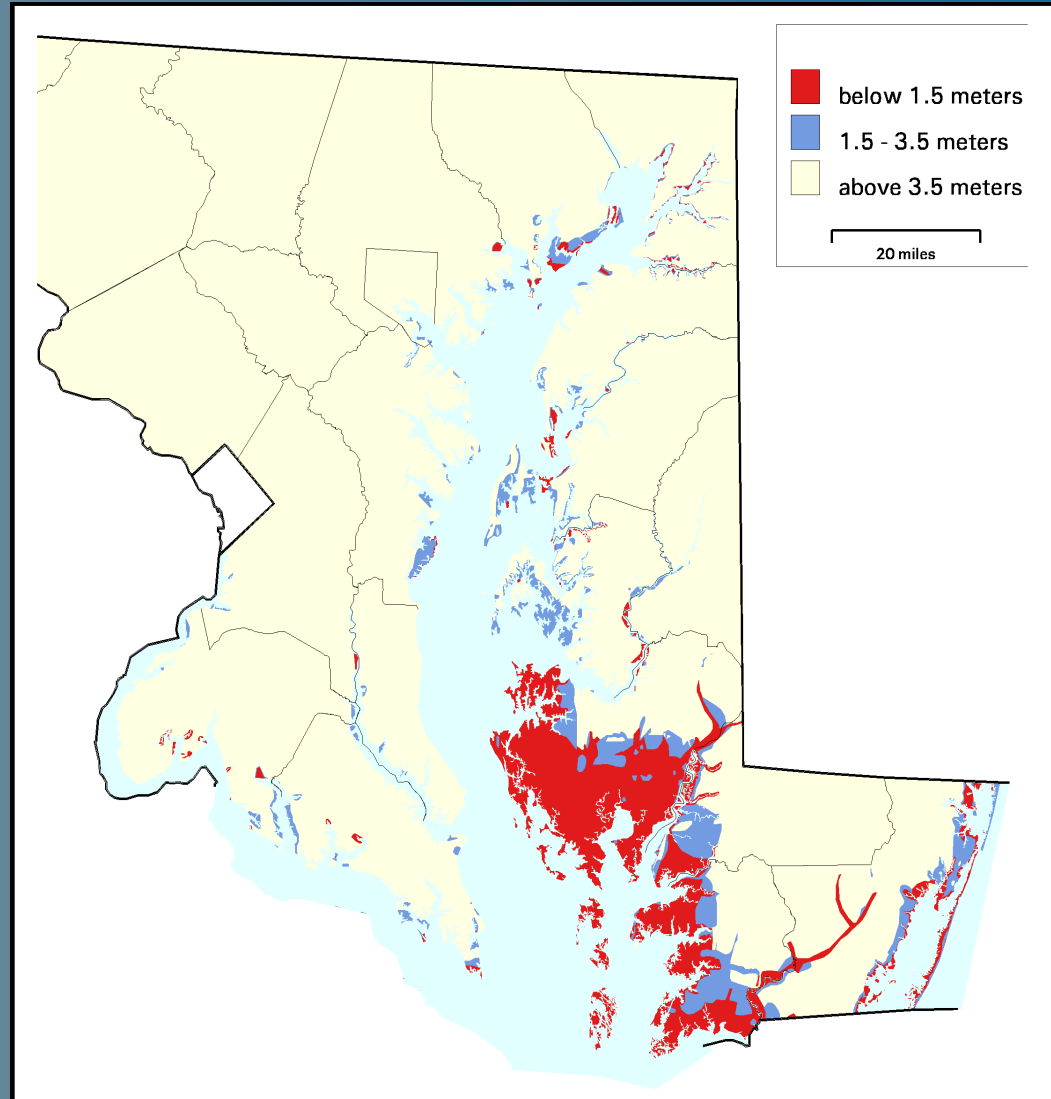
- **Rate of SLR double global average**
- **Land subsidence plus increases in global sea level**
- **By 2100, Md could see rise of 2-3 ft (Johnson, 2000)**

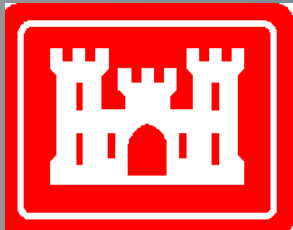


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Land Vulnerable to Inundation - Md

The areas in red roughly portray land that may be inundated at high tide if sea level rises 50 centimeters or more (Titus, 2000).





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Land Vulnerable to Inundation

Ocean City,
Md

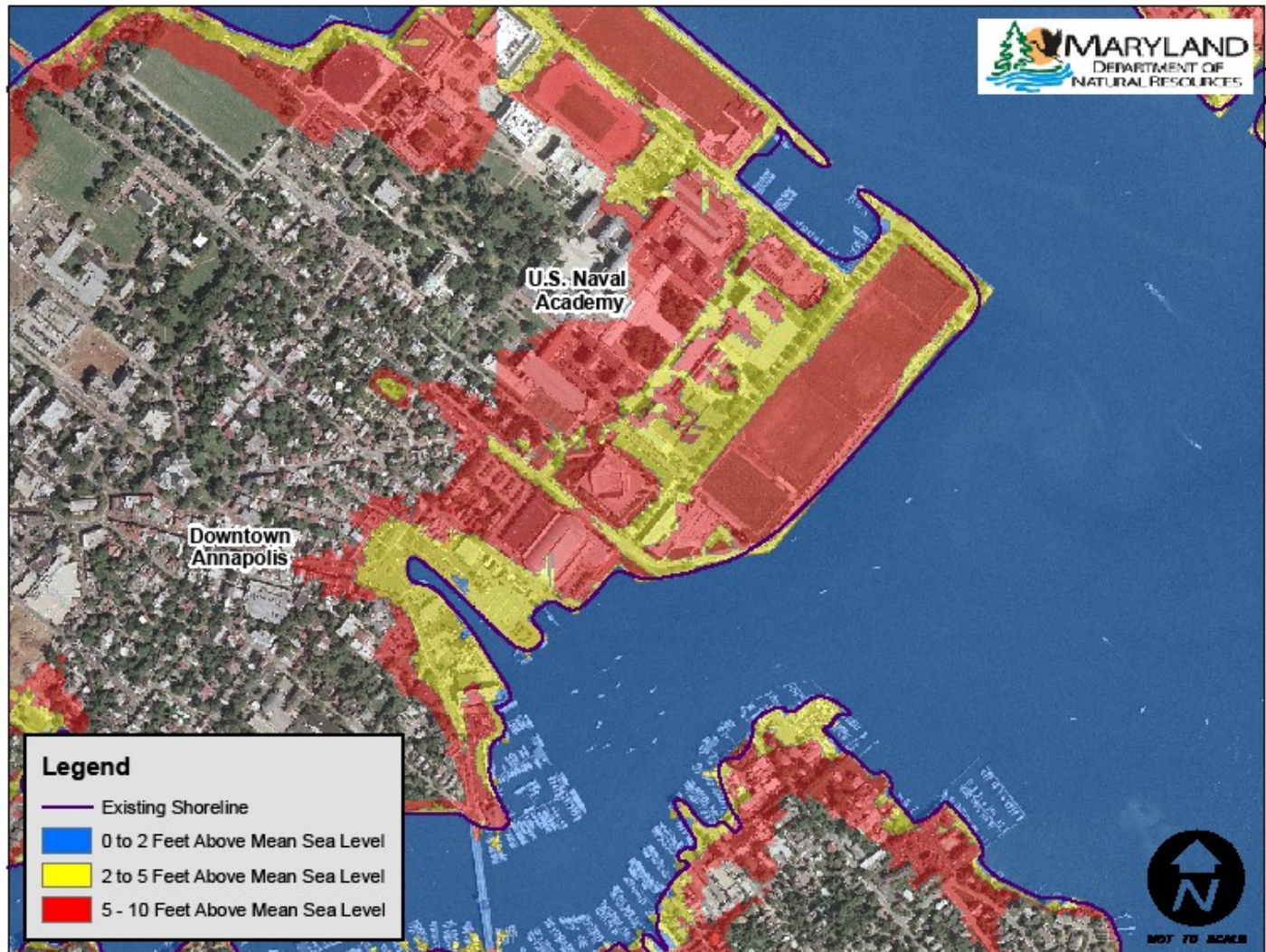


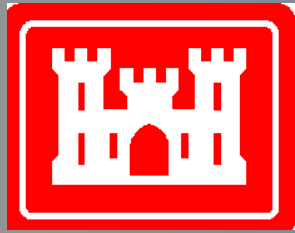


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Land Vulnerable to Inundation

Annapolis,
Maryland

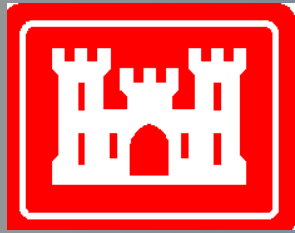




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MARYLAND COMMISSION ON CLIMATE CHANGE

- **Develop a Plan of Action:**
 - Climate Change Impact Assessment
 - Greenhouse Gas and Carbon Footprint Reduction Strategy
 - Strategy for Reducing Maryland's Climate Change Vulnerability (Adaptation and Response)
- **Technical Working Groups**
- **June 08 Report**



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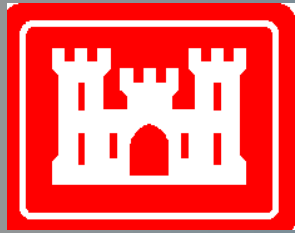
Adaptation and Response Technical Working Groups

Existing Built
Environment &
Infrastructure

Future Built
Environment &
Infrastructure

Human Health, Safety
& Welfare

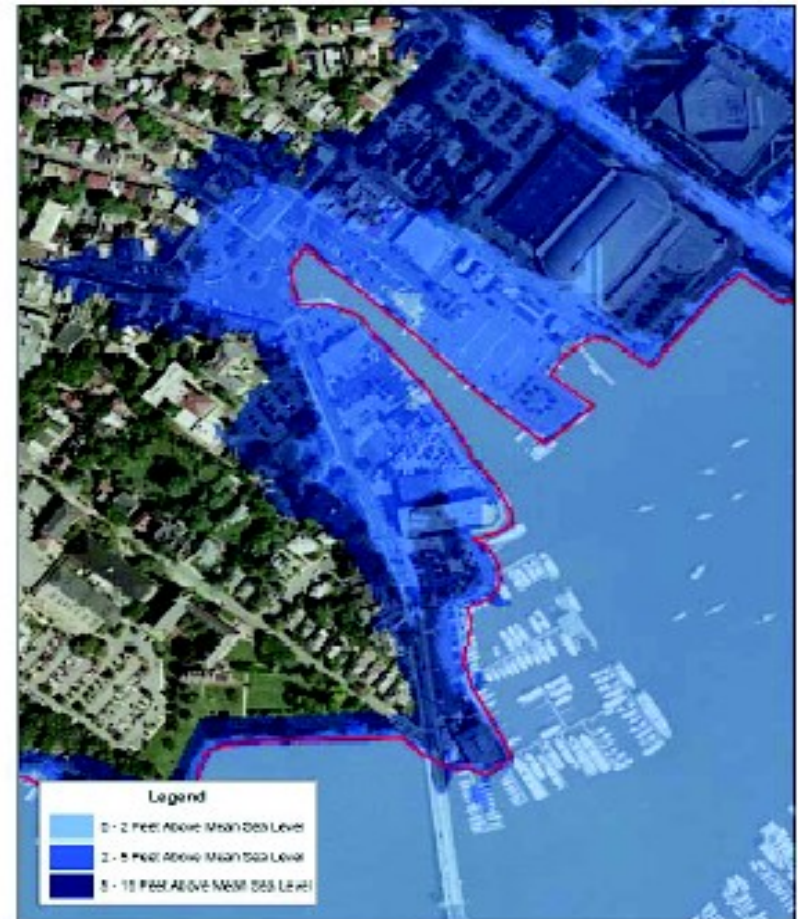
Resources and
Resource-Based
Industry

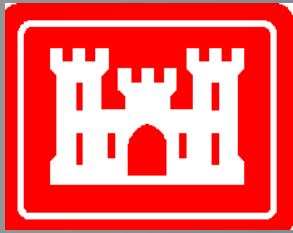


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Existing Built Environment & Infrastructure

- Observation Systems for Changes in Coastal Zones
- Adaptation of Vulnerable Coastal Infrastructure
- Building Code Revisions & Infrastructure Design Standards
- Disclosure



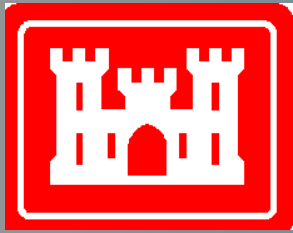


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Future Built Environment & Infrastructure

- Integrated Planning for SLR, Coastal Storms and Coastal Erosion
- State Agency Integration and Reporting on CCC Findings
- Climate Change and Insurance Advisory Committee
- Integrated GIS: Mapping, Modeling and Monitoring
- Economic Development Initiative



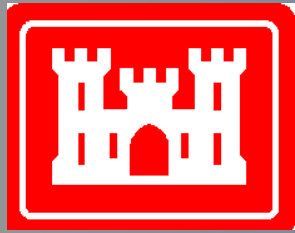


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Resources and Resource-based Industry

- New Criteria for Priority Protection Areas
- Forest and Wetland Protection
- Sustainable Shorelines and Buffer Area Management Practices
- Resource-Based Industry Economic Initiative

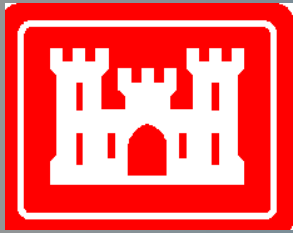




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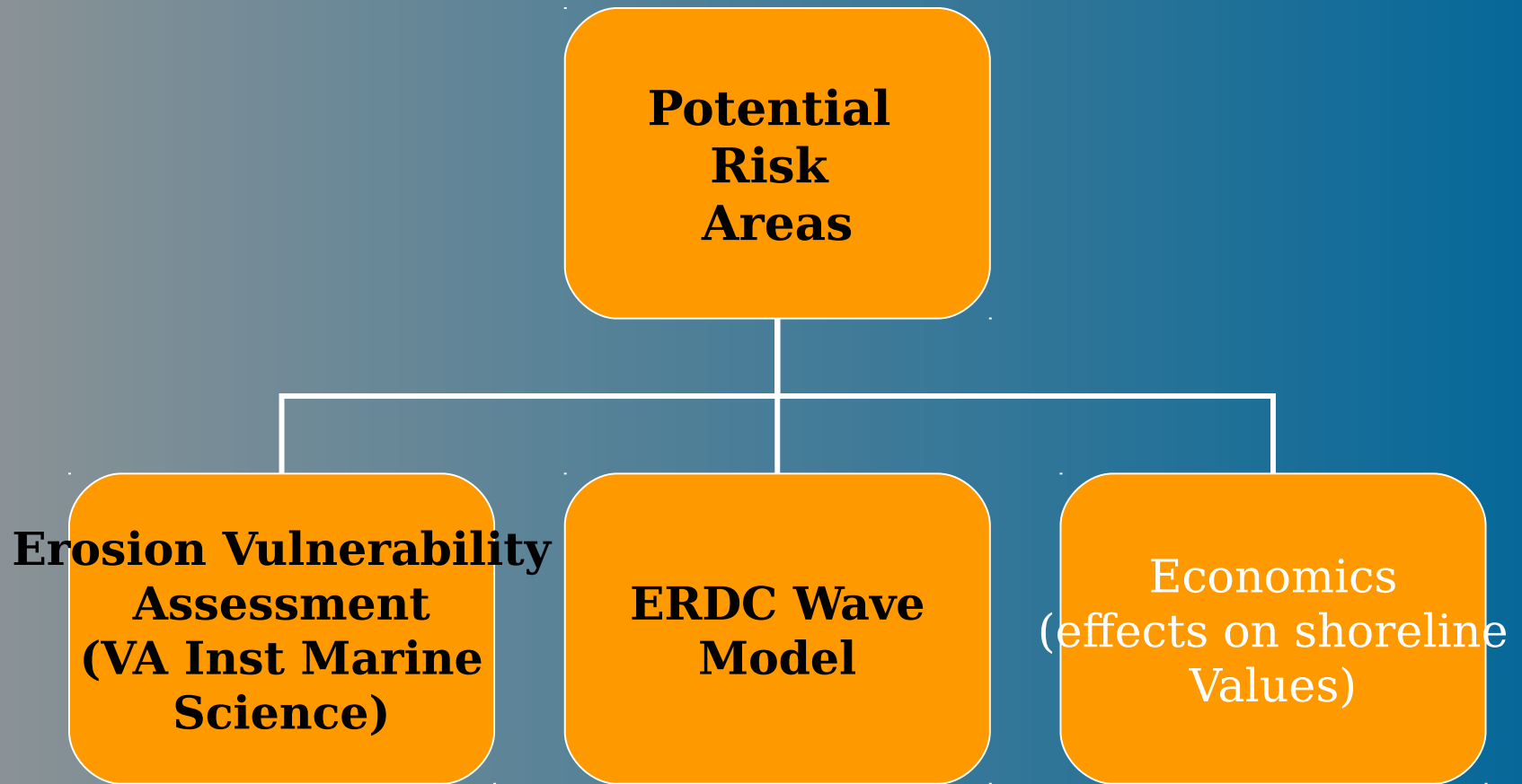
USACE Chesapeake Bay Shoreline Erosion Master Plan

- **Sponsor: State of Md Dep't of Nat Resources**
- **First Phase Master Plan followed by feasibility studies of specific sites**
- **Master Plan Components:**
 - **Coastal erosion projection (50 year)**
 - **Vulnerable areas (ecosystem/structures) - identify, map, select priorities**
 - **Sea level rise mapping**
 - **Sea, lake, and overland surge from hurricanes (SLOSH) mapping**

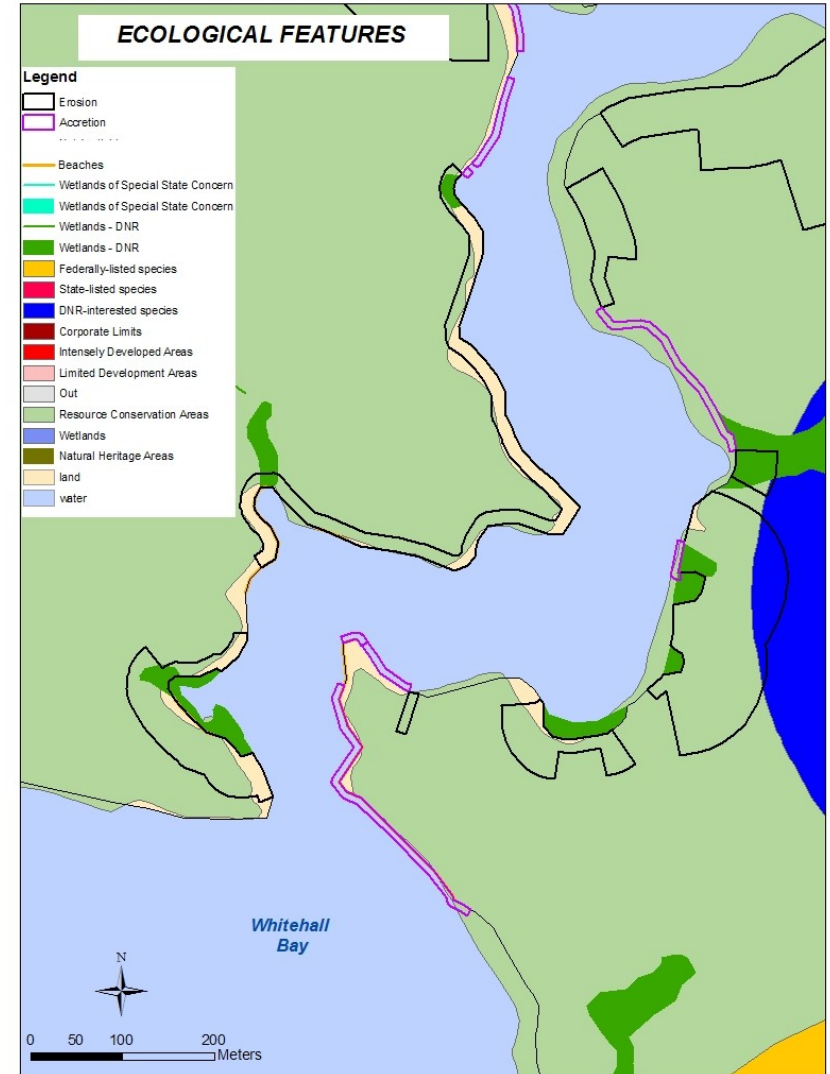


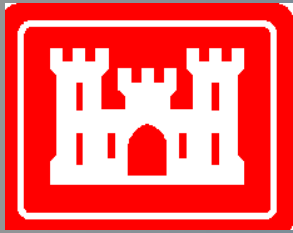
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Coastal Erosion Component



Erosion Vulnerability Ecological Risk Areas

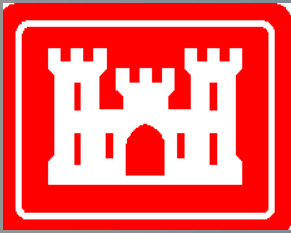




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Sea Level Rise Projections (Mapping)

- **For Master Planning effort, will be provided to State and Local governments to assist them with coastal planning and management**
- **SLR projections will be useful in feasibility phase to address site-specific vulnerable areas... application will depend on evolving USACE policies with respect to SLR**



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USACE National Planning & Policy Needs in view of SLR

- **SLR and storm surge will potentially impact**
 - design and performance of coastal protection structures
 - shoreline erosion rates
 - sensitive coastal ecosystems
 - sedimentation rates in federal navigation channels
 - hurricane preparedness and hazard mitigation planning
- **Plan selections may be sensitive to SLR; adaptive management increasingly important in coastal zone**
- **Regional sediment management will become increasingly important with increases in SLR**
- **Future revisions to Planning policies must anticipate, and be informed by, emerging science and engineering on SLR**



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CENAB-PL Points of Contact

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